

Preventing Another Elk River

Improving knowledge and awareness among water suppliers,
first responders, and facility owners

Andrew Madison

Granite State Rural Water Association

NH Water & Watersheds Conference

March 24, 2017

Plymouth, NH



Granite State Rural Water Association

- Membership based water utility association
- NH State affiliate of NRWA
- 400+ Members
- Water and Wastewater
- Primarily serving small systems
- Training/Technical Assistance
- Funding from USDA/EPA



Services we Offer

- Training
 - Operator Field Day (Sept 12, 2017)
 - Training Credit Classes Offered Around the State
- On-Site Technical Assistance
 - Leak Detection
 - Line Location
 - Valve Maintenance
 - Management Guidance
- Source Water Protection Planning
- Legislative Representation



- Merrimack River, NH
 - Coordination between emergency responders, water suppliers, and industrial facilities.

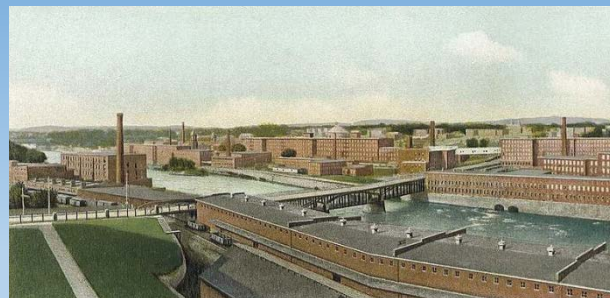
The Merrimack River- A Natural Resource

- 116 Miles long
- 4,635 Sq Mi watershed
- Source: Pemigewasset and Winnepesaukee Rivers
- Groundwater resources
- Drinking water supply for 168,000 in NH
- 114,000 served by PWS
- 54,000 served by private wells



The Merrimack River- A Threatened Resource

- 19th and 20th Century Industrialization
- AST/UST's
- Industrial Sites
- Urbanization
- 2009- USFS: 4th Most threatened river in US
- 2016- American Rivers: 8th Most threatened river in US



Industrial Development- A WQ Concern

- Industrial sites can present a hazard to PWS'
- Hazardous materials or wastes stored in large quantities
- Leaky AST's or UST's
- Spills or Releases
- Industrial disasters
- Improper waste disposal
- Small releases over time



Bhopal India Gas Disaster

- 30 Metric tons of methyl isocyanate gas released overnight: 2-3 Dec. 1984 from a Union Carbide plant
- Result of a runaway chemical reaction
- 2,259 Killed immediately
- Estimated 15,000 total deaths
- 558,000 Injured, many with permanent disabilities
- Groundwater remains contaminated around the site
- \$470 Million settlement, no criminal penalties
- Catalyst for the passage of EPCRA in 1986



EPCRA- A Response to Industrial Hazards

- Emergency Planning and Community Right to Know Act of 1986
- Administered by states (NHDOS)
- Local Emergency Planning Committees (LEPC's)
- Emergency notification requirements
- Chemical and facility reporting requirements
- Emergency planning requirements
- Accommodations for trade secrets
- Most states require Tier II reporting



EPCRA Tier II Chemical Reporting Requirements

- 10,000 lbs or greater of any hazardous substance

-Section 311(e)

- 500 lbs or greater of any extremely hazardous substance

-Section 302

- SDS (MSDS) sheets for substances in reportable quantities

- Emergency contact information

- Storage types/volumes

- Storage locations

- GPS points

-Floor plans

Check if information below is identical to the information submitted last year. Reporting Period: January 1 to December 31, 20__

**Tier Two
Emergency and Hazardous Chemical Inventory**
Specific Information by Chemical

For Official Use Only
State ID#: _____
Date Received: _____

Facility Identification																																													
Name	Maximum No. of Occupants: <input type="checkbox"/> Manned <input type="checkbox"/> Unmanned																																												
Street	County	City	State Zip																																										
Latitude	Longitude	NAICS Code	Phone Number (optional)																																										
Dun & Bradstreet Number	TRI Facility ID: <input type="checkbox"/> N/A	RMP Facility ID: <input type="checkbox"/> N/A																																											
Subject to Emergency Planning under Section 302 of EPCRA (45 CFR part 355)? <input type="checkbox"/> Yes <input type="checkbox"/> No																																													
Subject to Chemical Accident Prevention under Section 112(j) of CAA (40 CFR part 68, Risk Management Program)? <input type="checkbox"/> Yes <input type="checkbox"/> No																																													
Owner or Operator Information		Parent Company Information (optional)																																											
Name	Address	Name	Dun & Bradstreet Number																																										
Phone Number	Email	Phone Number	Email																																										
Facility Emergency Coordinator (if applicable)		Tier II Information Contact																																											
Name	Title	Name	Title																																										
Email Address		Email Address																																											
Phone Number	24-hour Phone	Phone Number	24-hour Phone																																										
Emergency Contacts																																													
Name		Name																																											
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Phone Number	24-hour Phone	Phone Number	24-hour Phone																																										
Email Address		Email Address																																											
Certification (Read and sign after completing all sections)																																													
I certify under penalty of law that I have personally examined and am familiar with the information submitted to pages one through and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.		<table border="1"> <thead> <tr> <th>Range Code</th> <th>Value</th> <th>Ts</th> </tr> </thead> <tbody> <tr><td>01</td><td>0</td><td>99</td></tr> <tr><td>02</td><td>100</td><td>499</td></tr> <tr><td>03</td><td>500</td><td>999</td></tr> <tr><td>04</td><td>1,000</td><td>4,999</td></tr> <tr><td>05</td><td>5,000</td><td>9,999</td></tr> <tr><td>06</td><td>10,000</td><td>49,999</td></tr> <tr><td>07</td><td>25,000</td><td>99,999</td></tr> <tr><td>08</td><td>50,000</td><td>149,999</td></tr> <tr><td>09</td><td>75,000</td><td>199,999</td></tr> <tr><td>10</td><td>100,000</td><td>499,999</td></tr> <tr><td>11</td><td>200,000</td><td>999,999</td></tr> <tr><td>12</td><td>1,000,000</td><td>9,999,999</td></tr> <tr><td>13</td><td>10,000,000</td><td>Greater than 10 million</td></tr> </tbody> </table>		Range Code	Value	Ts	01	0	99	02	100	499	03	500	999	04	1,000	4,999	05	5,000	9,999	06	10,000	49,999	07	25,000	99,999	08	50,000	149,999	09	75,000	199,999	10	100,000	499,999	11	200,000	999,999	12	1,000,000	9,999,999	13	10,000,000	Greater than 10 million
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Name and official title of owner/operator OR owner/operator's authorized representative																																													
Signature	Date Signed																																												

The public reporting and recordkeeping burden for this collection of information is estimated to range from 6 to 120 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

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EPCRA – An Imperfect Law

- Self-reported
- Limited resources for compliance monitoring/enforcement
- Complicated/confusing reporting instructions
- Changing chemical inventories complicate reporting
- Changing facility ownership or management



Elk River Disaster – January 2014

- Jan. 9th, 2014: 7,500 gallons MCHM released into the Elk River in Charlestown WV
- Discovered by water users
- Primary drinking water supply for Charleston, WV
- 300,000 without drinking water for 4 days
- 169 Sickened, 14 hospitalized
- Freedom Industries declares bankruptcy



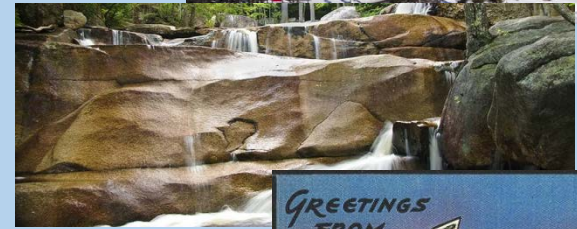
What Went Wrong on the Elk River?

- Water system not informed of the spill for 4 hours
- Freedom Industries never notified water supplier directly
- Spill discovered by WV DEP after water user complaints
- EPCRA Tier II report submitted by Freedom Industries in 2013
 - BUT no emergency plans submitted
- Water system unaware of the presence of MCHM
- Reporting \neq Preparing



Meanwhile in New Hampshire.....

- Evaluating and addressing the risks of hazardous materials storage became a major goal
- The Merrimack River was identified as particularly vulnerable
- Table-top exercises and workshops identified shortcomings in EPCRA Tier II reporting
- Verifying/improving the current inventory is an important first step
- End goals: Improve EPCRA compliance through education and outreach
- Improve communication between PWS', facilities, and first responders



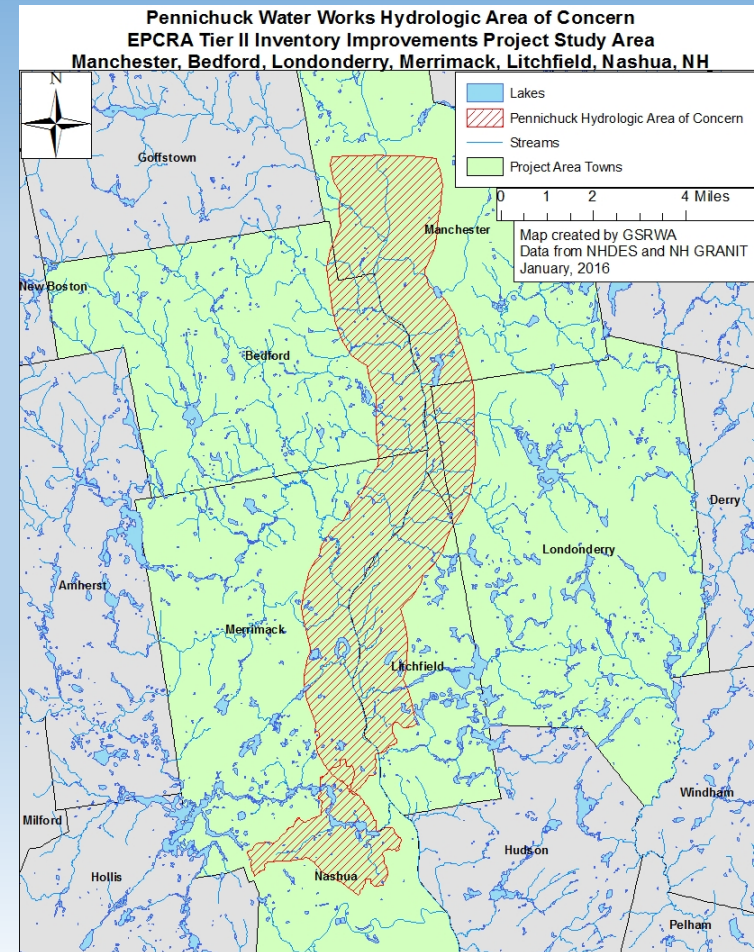
Improving Tier II Inventories

- 2015 NH DES Source Water Protection Grant
- Verify inventory of existing EPCRA Tier II facilities
- Goals: Provide water suppliers and first responders with verified data on hazardous materials storage and improve communication between involved parties



Project Area

- Hydrologic Area of Concern- Pennichuck Water Works
- Includes Merrimack Village District Wells
- Manchester, Bedford, Merrimack, Londonderry, Nashua
- Includes Rt. 3, I-93, and NH 101 Corridors
- Manchester-Boston Regional Airport
- Downtown Manchester



Project Tasks

- Develop an inventory of known Tier II reporters
- Attempt to identify potential non-reporting facilities
- Conduct site visits to update:
 - Chemical inventories
 - Facility contact information
 - GPS chemical storage locations
- Provide facilities with updated contact information for near-by PWS'
- Provide final report to NHDES, NHDOS, EPA Region 1, Local Fire Departments

Project Oversight

- Funding provided by NHDES and USDA-FSA
- Project advisory committee provided oversight, guidance, and comment on the final report
- State/federal agencies, local fire/emergency departments, drinking water providers, industry representatives (large facility managers), regional planners
- Two GSRWA staff members performed field work and created final report



Getting Started

- June 25, 2015: Project kick-off meeting
- Stakeholders invited to participate
- Initial Tier II inventory obtained from NHDOS and presented at meeting
- Support and buy-in from stakeholders sought
- Project advisory committee formed
- July-August, 2015: Letters of introduction sent out by local FD's
- Efforts made to identify potential non-reporting facilities
 - Windshield Surveys
 - Permits/NHDES records reviewed



Communicating with Facilities

- Appointments made to visit facilities after letters of introduction were sent out
- Facility owners were asked for permission to visit to verify Tier II data
- Voluntary nature of project was stressed
- Some facilities declined
- Two attempts to contact per facility

On-Site Data Collection

- Emergency and Tier II information contacts updated
- Chemical inventories and MSDS sheets reviewed
- Storage sites visited and GPS points taken
- Facilities provided with:
 - Map showing their location relative to PWS
 - Contact information for FD's and PWS
- Data recorded on Tier II reporting form
- All data collected kept confidential



Final deliverables

- Updated contact information
 - Emergency/ 24hr
 - Tier II information
- Specific GPS points for AST's/Storage locations
- Updated container volumes/average quantities on site
- Clarification on lead-acid batteries
- Education and outreach to facility owners

Participation from facilities

- 109 Facilities identified
 - 100 known Tier II reporters
 - 9 potential reporters
- 63 Allowed site visits
- 4 Reviewed information by phone
- 29 Provided no response
 - Lack of accurate contact information
- 6 Unable to be contacted
 - Contact information
- 7 Declined a site visit
 - National security concerns
 - Trade secrets



Contact Information

- Often inaccurate
- Call-centers as emergency contacts
 - Sometimes overseas
- Many emergency contacts listed
 - Not all actually being EC's
- Round Robin
 - Directories or answering services
- Emergency or information contact personnel change- not always updated



Chemical Inventories

- Overall, facilities were accurately reporting
 - Changing inventories/processes
- Lead-Acid Batteries
- Storage locations often lacking detail
- GPS points often inaccurate
 - Only one point required for Tier II
 - Individual AST's/storage locations not mapped
 - Average discrepancy: 1,600ft
 - Max discrepancy: 12 miles



Reception from Facilities

- Overall positive
- An opportunity to review their Tier II data for accuracy
- Being a good neighbor
- Opportunity to provide feedback on the reporting process
- Facility owners and managers want to be responsible community members
 - Not responsible for a spill
- Knowledge and understanding of near-by drinking water supplies was useful



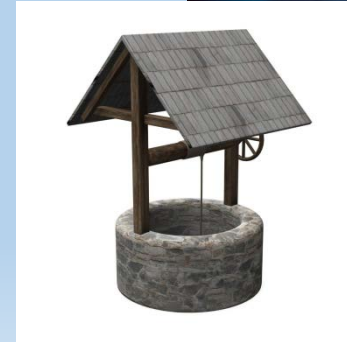
Reception from Emergency Responders

- An opportunity to refresh knowledge of EPCRA/Local facilities
- Improved chemical inventories and locations vital for life safety
- Updated contact information important for response
- Education and outreach reinforces the importance of reporting and planning



Reception from Water Suppliers

- An opportunity to become more familiar with chemical storage in their SPA's
- Increased awareness of water quality concerns among facilities
- Education and outreach encouraged communication between facilities, emergency responders and water suppliers



Major Takeaways

- Facilities should be vigilant in updating emergency contact information
 - Tier II reporting instructions should be specific as to who should be the emergency contact
- Facilities should submit GPS points for specific AST's or storage locations, especially for large facilities
 - Tier II reporting software should allow for this and encourage detailed descriptions of storage locations
- Communication and cooperation between emergency responders, water suppliers and facility managers should continue
 - Increased understanding of one another's roles and responsibilities in the event of a release or spill

Major Takeaways

- Advisory committee provided a forum for emergency responders, water suppliers, and facility owners to communicate and share concerns
- Brought to light the concerns of drinking water suppliers
- Identified difficulties facilities were having with Tier II reporting
- Provided first responders with updated inventory and contact information
- Recent developments highlight relevancy of Tier II reporting, notification, and communication

Next Steps

- Table top exercises including emergency responders, water suppliers, and facility owners
- Geographic Response Planning to coordinate the response to a spill
- Continued cooperation between facilities, responders, and water suppliers
- Continued education and outreach

Acknowledgements

- NHDES
- USEPA Region 1
- NHDOS
- Pennichuck Water Works
- Merrimack Village District
- Manchester Fire Department
- Nashua Dept. of Emergency Management
- Merrimack Fire Department
- Manchester-Boston Regional Airport
- Londonderry Fire Department
- Eversource Energy
- Nashua Regional Planning Commission
- New England Interstate Water Pollution Control Commission



Thank You!

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